

## ABSTRACT

The waveguide group branching filter according to the present invention is formed by boring out of two metal blocks constituent circuits including a circular-to-square waveguide multistage transformer 1, the branch waveguide polarizer/branching filter 4, a rectangular waveguide multistage transform 9, the rectangular waveguide H-plane T-branch circuit 10, and waveguide band-pass filters 8, 14 and 18; radio waves V1 and H1, which have their polarization planes vertical and horizontal, respectively, to the branching plane of the branch waveguide polarizer/branching filter 4 in a certain frequency band  $f_1$ , and a radio wave V2 of the same polarization plane as that of the radio wave V1 in a frequency band  $f_2$  higher than the frequency band  $f_1$  are incident to an input port P1, and the radio wave V1 is emitted from an output port P2, the radio wave H1 from an output port P3 and the radio wave V2 from an output port P4.